

DALI SUB C-8 D

WHITEPAPER



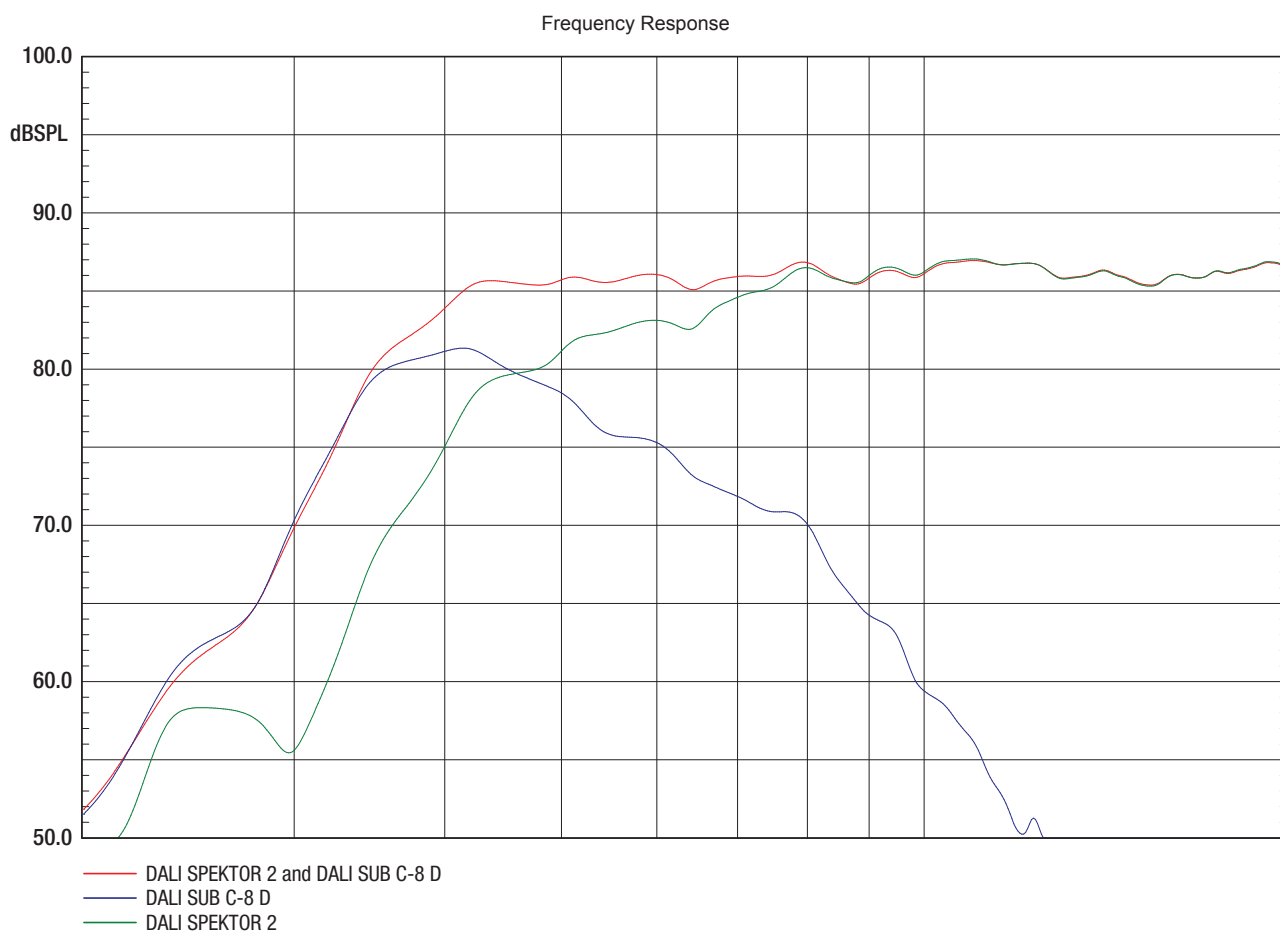
IN ADMIRATION OF MUSIC



INTRODUCTION

Unlike some subwoofers, the DALI SUB C-8 D has been engineered to perform equally well for both music and movie use. At DALI we believe that it is vital that a subwoofer renders a performance true to the input signal. Therefore a DALI subwoofer is anything but a 'boom-box'.

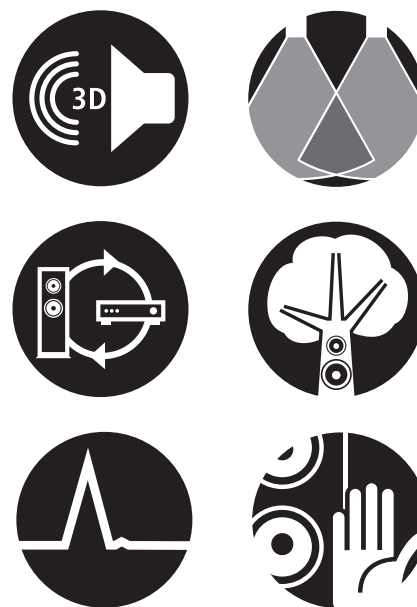
ACOUSTIC BACKGROUND



The DALI SUB C-8 D clearly has its heart set on high fidelity.

The qualities of the DALI SUB C-8 D allow it to perform equally well in a movie focused surround setup or a compact stereo setup used for mainly musical enjoyment.

Over the years DALI's engineers have developed a set of sound design principles, and today these are applied in the creation of every DALI speaker. Naturally, our subwoofers must be able to enter into any setup without sacrificing the purpose of providing wide dispersion, time coherent and low-loss performance.



You can read more about our sound design principles at <https://www.dali-speakers.com/sound/sound-design/>

CABINET

The solid MDF cabinet is designed and manufactured to meet the tough DALI specifications. The enclosure comes in a choice of Black Ash or Matt White finishes, making it blend perfectly with most speaker designs and room decors.

The entire cabinet is effectively decoupled from the floor by means of four polymer based oversized spikes,

giving the illusion of the unit to hover above the floor. The distance of 30 mm eliminates any potential turbulence from the space between the cabinet and the floor itself. Still, the proximity to the floor ensures that the benefit of having a down-firing subwoofer is maintained; higher efficiency and more freedom with positioning.



WOOFER

DALI SUB C-8 D is equipped with an 8" downward firing woofer. The cone is constructed from high-quality paper pulp, resulting in a rigid cone with excellent breakup characteristics, while at the same time being very lightweight and agile.

The engine of the woofer is built around an 'oversized' ferrite magnet, and is optimised for maximum flux within the voice-coil gap. This design was selected as it was crucial for the project team to reach a high B/L product to enable the SUB C-8 D to render the finer low frequency details of music, also at a higher sound pressure level. The measured B/L value of 14 N/Ampere is a good indication of the levels of control and precision that was reached. These levels are rarely to be found in this category at all, and the numerous listening sessions have truly convinced us that this was the right way to go.

The voice coil is 21.8 mm long and built for long excursions. It is vented to ensure air-cooling to the system and the coil itself. Venting the 4-layer voice coil allows the temperature to be kept low, enabling a stable impedance response.

The pole piece itself is also vented for maximum cooling. Here, the venting has another purpose too; it reduces internal compression in the motor system, ensuring free movement of the cone without any over/under pressure affecting the performance.

Adhering to the low-loss sound design principle, the surround of the woofer is built to allow long and linear excursion. The oversized suspension is designed to allow both weak and strong transients to turn into undistorted acoustic signals.





AMPLIFIER

The integrated 170 Watt RMS Class D amplifier is a highly linear construction. The DALI SUB C-8 D will follow and render the required signal with an absolute minimum of bias. Designed not only for continuous power, but also for peak power, this subwoofer is able to deliver 220 Watt of Peak Power. This is very relevant when it comes to both movie and music signals.

The switch mode power supply also contributes to a very low power consumption overall - only 0.4 Watt in stand-by mode, with the amplifier itself displaying an impressive efficiency of 70%. In unison, the high-efficiency amplifier section and power supply construction generate an absolute minimum of heat loss. For that reason you will find no external heat sink on this subwoofer.

To improve sound reproduction in general, and to ensure that this subwoofer can perform under difficult circumstances, a limiter has been incorporated into the amplifier section. The integrated limiter works in two areas: Firstly, it compares the input signal amplitude to the potential output signal level, and it compares the available supply voltage from the power supply to the expected output signal. If any of these comparisons show that there will be a problem, then the limiter will cut the signal in a soft manner and without affecting peak power.

Fitted with controls for gain, cut-off frequency, and phase, the DALI SUB C-8 D will adapt to any front speaker and room acoustics. With the choice of both LFE and LINE inputs, it can be connected to almost any amplifier, receiver or processor.

APPLICATION

Positioning a subwoofer is a very large part of creating the perfect audio reproduction. DALI recommends placing the SUB C-8 D in a corner, or if that is not possible, alongside a wall. This will maximise the bass output and the distribution around the room, resulting in fewer 'dead spots'. The compact size of the SUB C-8 D makes placing it correctly much easier than many larger subwoofers.

Available in Black Ash and Matte White, the SUB C-8 D is the natural companion for many DALI speakers. Any compact speaker from the SPEKTOR or ZENSOR series will integrate perfectly with the SUB C-8 D, and the SUB C-8 D will compliment surround setups from the same series just as well.

The design, technology, and construction of this subwoofer make it the perfect upgrade to any speaker system, regardless of brand. Whether it's a 2.1-, 5.1- or 7.2-channel system – or something in between – the DALI SUB C-8 D will take natural sound one step further.



TECHNICAL SPECIFICATIONS

DALI SUB C-8 D	
Frequency Range [+/- 3] dB [Hz]	33 – 200
Maximum SPL [dB]	109
Crossover Frequencies [Hz]	40 - 120
Low Frequency Driver(s)	1 x 8" long stroke
Low frequency driver, Diaphragm type	Paper
Enclosure Type	Bass reflex
Bass Reflex Tuning Frequency [Hz]	49
Max. Amplifier Power Output [RMS Watts]	220
Continuous IEC Power Output [RMS Watts]	170
Input Impedance [kohm]	25
Connection Input(s)	RCA, Stereo (low-pass filtered) LFE (Mono)
Magnetic Shielding	No
Recommended Placement	Floor, near wall or corner
Recommended Distance From Wall [cm/inches]	10 - 30 / 4 - 12
Functions	Crossover Frequency Phase Switch Standby (Auto Power) On/Off Switch, Volume (Gain)
Max. Power Consumption [Watts]	250
Dimensions (H x W x D) [mm/inches]	335 x 295 x 310 / 13.2 x 11.6 x 12.4
Weight [kg/lbs]	10.4 / 22.9

All technical specifications are subject to change without notice.